

**From:** William H. Sterner  
**To:** Microsoft ATR  
**Date:** 1/24/02 1:40pm  
**Subject:** Microsoft Settlement

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Renata B. Hesse  
Antitrust Division  
U.S. Department of Justice  
601 D Street NW  
Suite 1200  
Washington, DC 20530-0001

Dear Ms. Hesse:

I have carefully reviewed the following comments from "Mike O'Donnell" <odonnell@satisfaction.cs.uchicago.edu>, and agree with them in their entirety. Having worked closely with Apple computer since 1983 as an implementer of their technology at the University of Chicago, I have often seen the anticompetitive impacts Microsoft's business practices have had on Apple's technology. I have very little confidence that the current "remedies" will be effective in restraining Microsoft.

Yours,

William H. Sterner

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Director of Instructional Laboratories  
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>I would like to comment on the proposed Final Judgment in United  
>States v. Microsoft, as provided in the Tunney Act.

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>I find that the proposed judgment is insufficient by a large margin to  
>restore healthy competition in the computer operating systems and  
>software application markets, so it is not in the public interest and  
>should not be affirmed by the court.

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>The proposed Final Judgment attempts to remedy Microsoft's established  
>illegal anticompetitive practices by prohibiting particular forms of  
>conduct involving overly restrictive licensing terms, terms that vary  
>in order to reward those who accept and punish those who contest a  
>Microsoft monopoly, and terms that make switching to competing  
>products more difficult or more costly. It also prohibits certain  
>forms of retaliation against OEMs who support products competing with  
>Microsoft's products. It also requires Microsoft to disclose APIs and  
>communication protocols for its products under certain circumstances  
>and for certain purposes.

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>It is inherently difficult, and perhaps impossible, to remedy

>Microsoft's particular forms of illegal anticompetitive behavior  
>through conduct remedies. Both the underlying concepts in which  
>conduct remedies are defined, and the particular anticompetitive  
>techniques used by Microsoft change far too rapidly, and Microsoft  
>itself has far too much influence on those changes, for them to serve  
>in the foundation of effective conduct remedies.

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>The remedies in the proposed judgment refer to concepts of "API,"  
>"operating system," "middleware," "application," "platform software,"  
>"top-level window," "interface elements," "icons," "shortcuts," "menu  
>entries." The definitions of these concepts are not robust and  
>timeless. Compared to concepts in other branches of business and  
>engineering they are relatively ephemeral, controversial, dependent on  
>rapidly changing technological context, and subject to deliberate  
>manipulation by Microsoft. For example, an "operating system" in the  
>1960s was a software system to organize the basic functionality of a  
>computer, and it contained little or no user interface code. In the  
>1970s "operating systems" often contained substantial collections of  
>utility applications and rudimentary interactive user interfaces  
>called "shells." In the 1980s, the X Window system was created as a  
>form of what is now called "middleware" to provide a graphical  
>interactive user interface, used widely in conjunction with Unix  
>operating systems. Apple and Microsoft created similar graphical  
>interactive user interfaces, but defined them to be parts of their  
>operating systems, rather than additional middleware. In the near  
>future, distributed and network computing are likely to make it quite  
>difficult to determine the boundaries of a single operating system. In  
>the past, Microsoft appears to have deliberately manipulated the  
>boundaries of such conceptual categories to create and preserve a  
>monopoly position, and I expect it to continue such practices in the  
>future. The proposed judgment provides definitions that narrow these  
>already problematic concepts even further, making them even more  
>vulnerable to deterioration due to technological change and to  
>manipulation by Microsoft.

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>Furthermore, the particular conduct requirements in the proposed  
>judgment are far too narrow. Every one of the requirements is weak in  
>some way. For example, consider the requirement to "disclose to ISVs,  
>IHVs, IAPs, ICPs, and OEMs, for the sole purpose of interoperating  
>with a Windows Operating System Product, ... the APIs and related  
>Documentation that are used by Microsoft Middleware to interoperate  
>with a Windows Operating System Product." Microsoft and other software  
>vendors like to treat their Applications Product Interfaces (API) as  
>intellectual property. But in good engineering practice these are key  
>parts of the warrantable specifications of a product. This holds in  
>particular for operating systems and middleware, which by their nature  
>are especially intended for, suitable for, and often useless without  
>interaction with other software products. APIs define the quality of  
>that interaction, but they do not provide it. The implementation of an

>API in program code (which is naturally protected by trade secret,  
 >copyright, and patent law) provides the quality of interaction  
 >defined by an API. Without access to the complete API, the licensor of  
 >an operating system cannot employ the system freely in the way that  
 >good software engineering practice suggests. With complete public  
 >access to an API, a software company may still protect its  
 >implementation of the API, which contains the real value that it has  
 >created. Keeping an API secret does not correspond to keeping the  
 >inner workings of a product secret. Rather, it corresponds to keeping  
 >the precise function accomplished by that product secret.  
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 >So the public interest calls for the widest possible dissemination of  
 >API documentation. But the proposed judgment explicitly calls for  
 >disclosure of APIs "for the sole purpose of interoperating with a  
 >Windows Operating System Product," and only the "APIS and related  
 >Documentation that are used by Microsoft Middleware to interoperate  
 >with a Windows Operating System Product." This excludes the use of  
 >information about the API to provide competitive platforms for running  
 >Windows-compatible software. Keep in mind that Windows-compatible  
 >software does not necessarily come from Microsoft. Microsoft benefits  
 >from the value added to its operating system products by a large  
 >number of less powerful software houses that create Windows-compatible  
 >software. By holding the Windows operating system API secret,  
 >Microsoft in effect keeps crucial information about other companies'  
 >software applications secret, denying those applications the value  
 >added by competing operating systems on which they may run.  
 >  
 >Compare the Windows market (and the preceding DOS market) to the  
 >Unix/Linux/Posix market. Microsoft uses secret and changeable APIs to  
 >effectively eliminate competition to provide alternative operating  
 >systems running Windows applications. A competing operating system  
 >must use different APIs, and therefore cannot support all of the same  
 >applications. By contrast, the Posix standard is a completely public  
 >API for Unix/Linux. Various companies, such as Sun Microsystems,  
 >compete to provide different implementations of the Posix  
 >API. Consumers may run Unix/Linux applications on any of these  
 >operating systems.  
 >  
 >Similarly, in the hardware market for processors, the specification of  
 >the x86 instruction set architecture (the hardware analog to a  
 >software API), is public. As a result, AMD competes with Intel to  
 >implement that architecture, with immense benefit to the public  
 >interest. Similar publication of standards in the overall  
 >functionality of personal computers led to the immensely beneficial  
 >competition among makers of IBM-compatible PCs. The failure to  
 >disclose Windows operating system APIs destroys the possibility of  
 >similarly beneficial competition among vendors of operating systems.  
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 >Very similar considerations to those raised above for APIs apply to

>communication protocols (for which the proposed judgment provides  
>limited disclosure) and to file formats (not covered in the proposed  
>judgment). Note that Adobe made full public disclosure of its  
>PostScript and PDF formats, compared to Microsoft's secrecy regarding  
>Word formats, and that this disclosure served the public interest  
>immensely by promoting the wide availability of PostScript and PDF  
>printers and viewers.  
>  
>There are many other detailed shortcomings of the proposed Final  
>Judgment, including the remaining conduct restrictions and the  
>enforcement methods. I expect that other correspondents will treat  
>some of them.